

50EH5

PENTODE

FOR AF POWER-AMPLIFIER APPLICATIONS

DESCRIPTION AND RATING

The 50EH5 is a miniature power pentode primarily designed for use in the audio-frequency power-output stage of radio receivers and phonographs. The tube features high power sensitivity at low plate and screen voltages.

GENERAL

ELECTRICAL

Cathode—Coated Unipotential		
Heater Voltage, AC or DC	50	Volts
Heater Current	0.15	Amperes
Direct Interelectrode Capacitances, approximate*		
Grid-Number 1 to Plate	0.65	$\mu\mu f$
Input	17	$\mu\mu f$
Output	9.0	$\mu\mu f$

MECHANICAL

Mounting Position—Any
Envelope—T-5½, Glass
Base—E7-1, Miniature Button 7-Pin

MAXIMUM RATINGS

DESIGN-CENTER VALUES

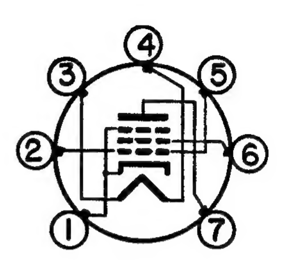
Plate Voltage	135	Volts
Screen Voltage	117	Volts
Positive DC Grid-Number 1 Voltage	0	Volts
Plate Dissipation	5.0	Watts
Screen Dissipation	1.75	Watts
Heater-Cathode Voltage		
Heater Positive with Respect to Cathode		
DC Component	100	Volts
Total DC and Peak	200	Volts
Heater Negative with Respect to Cathode		
Total DC and Peak	200	Volts
Grid-Number 1 Circuit Resistance		
With Fixed Bias	0.1	Megohms
With Cathode Bias	0.5	Megohms
Bulb Temperature at Hottest Point	220	C

Design-Center ratings are limiting values of operating and environmental conditions applicable to a bogey tube of a specified type as defined by its published data, and should not be exceeded under normal conditions.

The tube manufacturer chooses these values to provide acceptable serviceability of the tube in average applications, taking responsibility for normal changes in operating conditions due to rated supply-voltage variation, equipment component variation, equipment control adjustment, load variation, signal variation, environmental conditions, and variations in tube characteristics.

The equipment manufacturer should design so that initially no design-center value for the intended service is exceeded with a bogey tube in equipment operating at the stated normal supply-voltage.

BASING DIAGRAM

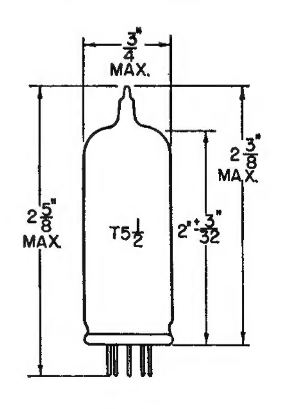


EIA 7CV

TERMINAL CONNECTIONS

Pin 1—Cathode and Grid Number 3 (Suppressor)
Pin 2—Grid Number 1
Pin 3—Heater
Pin 4—Heater
Pin 5—Grid Number 1
Pin 6—Grid Number 2 (Screen)
Pin 7—Plate

PHYSICAL DIMENSIONS



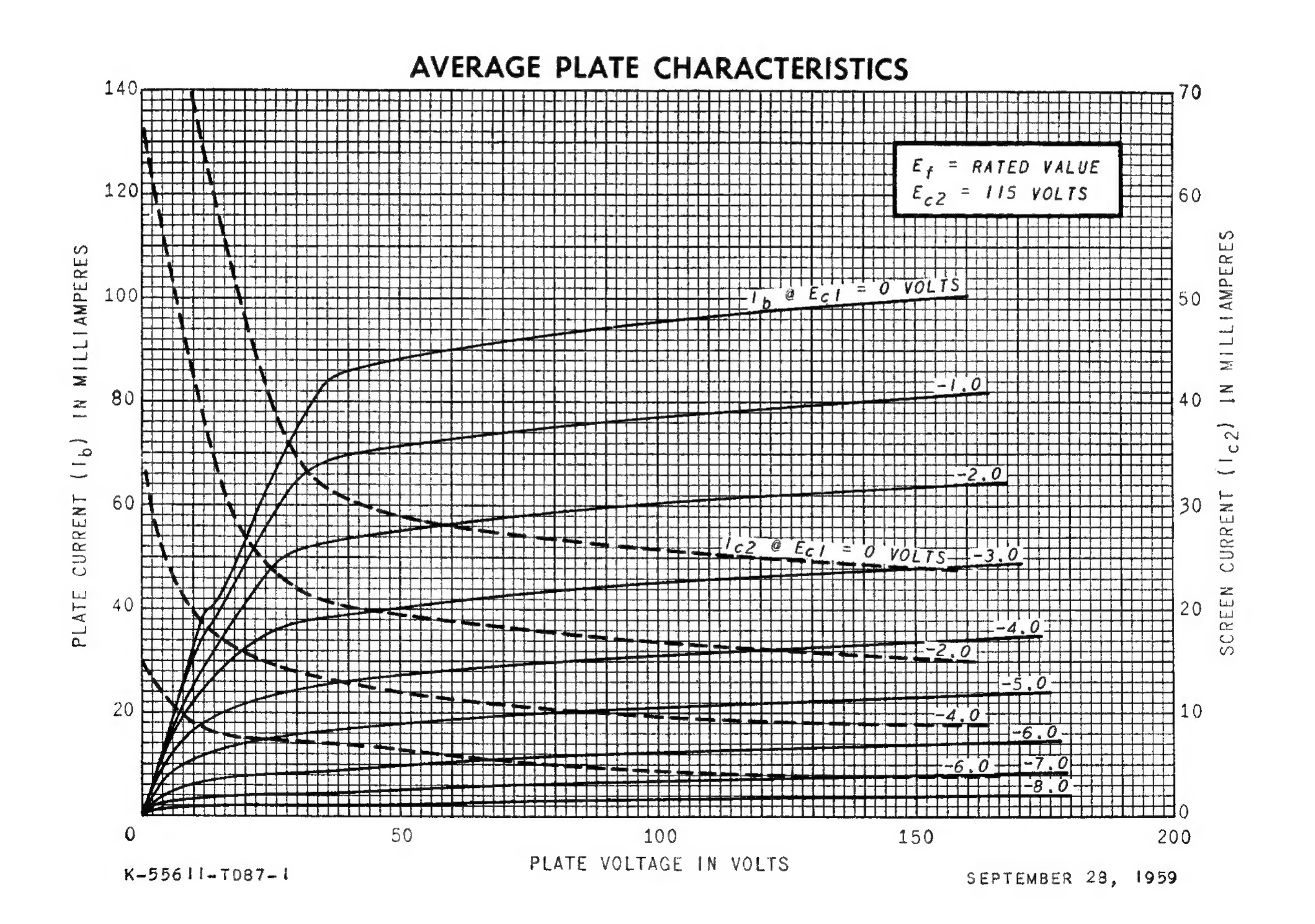
EIA 5-3

CHARACTERISTICS AND TYPICAL OPERATION

CLASS A₁ AMPLIFIER

Plate Voltage	110	Volts
Screen Voltage	115	Volts
Cathode-Bias Resistor	62	Ohms
Peak AF Grid-Number 1 Voltage	3.0	Volts
Plate Resistance, approximate	11000	Ohms
Transconductance	14600	Micromhos
Zero-Signal Plate Current	42	Milliamperes
Maximum-Signal Plate Current	42	Milliamperes
Zero-Signal Screen Current	11.5	Milliamperes
Maximum-Signal Screen Current	14.5	Milliamperes
Load Resistance	3000	Ohms
Total Harmonic Distortion, approximate	7	Percent
Maximum-Signal Power Output	1.4	Watts

* Without external shield.



AVERAGE TRANSFER CHARACTERISTICS

K-55611-TD87-2

SEPTEMBER 28, 1959

AVERAGE TRANSFER CHARACTERISTICS

K-55611-TD87-3

SEPTEMBER 28, 1959

OPERATION CHARACTERISTICS

PLATE CURRENT
POWER OUTPUT
DISTORTION
SCREEN CURRENT

E_f = RATED VALUE
E_b = 110 VOLTS
E_{c2} = 115 VOLTS
R_k = 62 OHMS
E_{sig} = 2.1 VOLTS (RMS)

POWER OUTPUT IN WATTS: 0, 0.5, 1.0, 1.5, 2.0

TOTAL HARMONIC DISTORTION IN PERCENT: 0, 5, 10, 15, 20

MAXIMUM-SIGNAL PLATE AND SCREEN CURRENT IN MILLIAMPERES: 0, 10, 20, 30, 40, 50

LOAD RESISTANCE IN OHMS: 0, 1000, 2000, 3000, 4000, 5000, 6000, 7000

K-55611-TD87-4

SEPTEMBER 28, 1959